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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,457	03/10/2004	Carl Geisler	18130 US	4459

7590 10/03/2006

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EXAMINER	
PERKINS, PAMELA E	

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/797,457	GEISLER ET AL.	
	Examiner	Art Unit	
	Pamela E. Perkins	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *10-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☒ Claim(s) *9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the filing of the RCE on 2 August 2006. Claims 1-22 are pending; claims 10-22 have been previously withdrawn from consideration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim1 is rejected under 35 U.S.C. 102(b) as being anticipated by Hosoi (JP 61-058259).

Hosoi discloses a process for preparing an electronic package where a ceramic housing (1) as an internal cavity for receiving a micro device (5) and having at least one interface portion; treating the housing to form a tungsten layer (3) on the interface portion; and overlaying a palladium layer (4) on the tungsten layer (3) on the interface portion to render it a solderable interface portion suitable for soldering to another component (7) (Fig. 1; constitution).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 3, 7 and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoi in view of Peterson et al. (6,674,159).

. Hosoi disclose the subject matter claimed above except forming the tungsten layer using a thick film technique and applying a protective coating over the palladium layer.

Referring to claim 7, Peterson et al. disclose a process for preparing an electronic package where a ceramic housing defines an internal cavity for receiving a micro device and having one or more interface portions (Fig. 3A; col. 5, lines 4-16); treating the housing to form a tungsten layer on the interface portions (col. 12, lines 23-33); and overlaying a layer on the tungsten layer (col. 30, line 42 thru col. 31, line 9). Peterson et al. further disclose applying a protective coating on the layer (col. 31, lines 1-9).

Referring to claim 2, Peterson et al. disclose forming the tungsten layer by applying tungsten to the interface portions using a thick film technique (col. 12, lines 23-33).

Referring to claim 3, Peterson et al. disclose forming the tungsten layer using a high temperature co-fired ceramic technique (col. 12, lines 23-33).

Referring to claim 8, Peterson et al. disclose a solderable interface is provided at the interface portions, the solderable interface consisting essentially of the tungsten layer, the palladium layer, and the protective coating (col. 30, line 42 thru col. 31, line 9).

Since Hosoi and Peterson et al. are both from the same field of endeavor, a process for preparing an electronic package, the purpose disclosed by Peterson et al. would have been recognized in the pertinent art of Hosoi. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hosoi by forming the tungsten layer using a thick film technique and applying a protective coating over the palladium layer as taught by Peterson et al. reduce the number of processing steps used in the formation of the electronic package and increase the strength of the electronic package (col. 2, lines 37-54).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoi in view of Ouellet et al. (6,902,656).

Hosoi discloses the subject matter claimed above except the tungsten layer having a thickness between 0.0005" and 0.0015".

Ouellet et al. disclose a process for preparing an electronic package where a housing defines an internal cavity for receiving a micro device and having one or more interface portions; treating the housing to form a tungsten layer on the interface portions (col. 11, lines 38-44); overlaying a palladium layer on the tungsten layer; and applying a protective coating to the palladium layer (col. 20, lines 55-64; col. 21, lines 25-28).

Referring to claim 4. Ouellet et al. disclose the tungsten layer having a thickness between 0.0005" to about 0.0015" thick[1] (col. 19, lines 29-33 & 45-51).

Since Hosoi and Ouellet et al. are both from the same field of endeavor, a process for preparing an electronic package, the purpose disclosed by Ouellet et al.

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[1] 0.0005" = 12.7 μm

would have been recognized in the pertinent art of Hosoi. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hosoi by overlaying a palladium layer on the tungsten layer as taught by Ouellet et al. to increase yield (col. 8, lines 18-45).

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoi in view of Stark (6,627,814) and Ouellet et al.

Hosoi discloses the subject matter claimed above except applying the palladium layer to the tungsten layer electrolytically.

Stark discloses a process for preparing an electronic package where a housing defines an internal cavity for receiving a micro device and having one or more interface portions; treating the housing to form a metal layer on the interface portions; disposing the micro device in the cavity and placing a lid on the housing along the interface portions (Fig. 1; col. 4, lines 10-35; col. 7, lines 17-20).

Referring to claim 5, Stark discloses applying the metal layer electrolytically (col. 7, lines 35-45).

Since Hosoi and Stark are both from the same field of endeavor, a process for preparing an electronic package, the purpose disclosed by Stark would have been recognized in the pertinent art of Hosoi. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hosoi by applying a metal to the structure electrolytically as taught by Stark to lower cost and production time (col. 2, lines 10-30).

Referring to claim 6, Ouellet et al. disclose the palladium layer having a thickness between 25 micro-inches to about 150 micro-inches[2] (col. 21, lines 19-29).

Allowable Subject Matter

Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: prior art does not anticipate, teach, or suggest placing a lid on the housing along the solderable interface portion and exposing the housing to temperatures sufficient to reflow the palladium layer to form a solder seal between the housing and the lid.

Response to Arguments

Applicant's arguments filed with the after-final request for reconsideration on 15 May 2006 have been fully considered but they are not persuasive. Unfortunately, the amended claims filed on 2 August 2006 do not put the application in condition for allowance. Although applicant has amended the claims to indicate the palladium layer is added to an interface portion to render it solderable, applicant does not claim a particular interface portion. Therefore, using the broadest reasonable interpretation, the interface portion may be to connect a package to a carrier as shown in Hosoi.

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[2] 25 μin = 0.635 μm

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pamela E. Perkins whose telephone number is (571) 272-1840. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PEP
25 September 2006

Zandra V. Smith
Supervisory Patent Examiner
28 Sept 2006